FTIP IDs# *(required)*: 47520

TCWG Consideration Date: August 23, 2011

Project Description *(clearly describe project)*

In identifying and selecting possible alternatives for the project, the following factors were considered: project cost, improvement to roadway LOS, environmental impacts, and other traffic-related issues. Two Build Alternatives were deemed viable alternatives by the Project Development Team (PDT). A No Build Alternative was utilized as a baseline for this project. The following are the project Build Alternatives:

- Build Alternative 1: New Partial Cloverleaf Interchange (as proposed in the Caltrans Project Study Report [PSR]); and
- Build Alternative 2: New Modified Diamond Interchange (as developed by the PDT).

Common Design Features of the Build Alternatives

Each Build Alternative would feature new entrance and exit ramps as well as a new bridge overcrossing providing a direct and continuous alignment for Jefferson Street traffic crossing I-10. The two Build Alternatives are shown in Exhibit 1a (Site Plan – Alternative 1) and Exhibit 1b (Site Plan – Alternative 2).

Within the project limits, the City of Indio's *2020 General Plan* Circulation Element states the ultimate facility configuration for Jefferson Street is an Augmented Major (A) with a design speed of 90 kilometers/hour (55 miles per hour [mph]). The current design of the proposed Build Alternatives provide for a design speed of 75 kilometers/hour (45 mph) along Jefferson Street through the interchange due to horizontal and vertical geometric constraints. The proposed design speed meets minimum standards per the Caltrans *Highway Design Manual* (HDM). Varner Road has already been realigned to the north and would be widened to its ultimate configuration west and east of Jefferson Street as part of a separate project to be constructed by the City of Indio. The reconstruction of Varner Road west and east of Jefferson Street would take place and be open to traffic prior to construction of the interchange project addressed herein. Jefferson Street on the north side of the interchange would be resurfaced and widened at the location where the proposed alignment joins the existing pavement.

The proposed project provides two-lane ramp meter entrances at all interchange entrance ramps including right-of-way (ROW), geometrics to accommodate vehicle storage, ramp meter equipment and California Highway Patrol (CHP) enforcement areas in accordance with the Ramp Meter Design Manual. However, according to the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) titled "Making the Connections," no HOV, Park and Ride, and transit facilities are planned within the project limits with the design year 2036. Therefore, it has been determined HOV preferential lanes would not be included in the proposed project. This is not in compliance with Ramp Metering Policy Procedures, and as such, Fact Sheet Exceptions to Ramp Metering Policy were reviewed and concurred on February 22, 2008.

For each Build Alternative, the sidewalk extends to the southern limit of the project and terminates at the existing railroad overcrossing which currently has no provision for pedestrian crossing facilities. The construction of the sidewalk over the railroad would be addressed in a separate project.

Highway planting would be part of this project and would adhere to the I-10 Coachella Valley Corridor Master Plan. It is anticipated all Build Alternatives would require relocation of the Imperial Irrigation District overhead power lines running west to east on the northerly State ROW boundary to accommodate interchange reconstruction.

Due to geometric constraints, all Build Alternatives would propose the following non-standard advisory design features:

- Superelevation runoff (Highway Design Manual Index 202.5[2])
- Superelevation transition (Highway Design Manual Index 202.5[1])
- Compound Curve (Highway Design Manual Index 203.5)

The proposed non-standard design features are addressed in Fact Sheet Exceptions to Advisory Design Standards per Caltrans requirements. Design Exceptions to Advisory Standards were reviewed and concurred in January 2008.

The proposed eastbound exit ramp for each Build Alternative would require construction of a MSE retaining wall at the boundary of the Union Pacific Railroad (UPRR) ROW. The proposed MSE wall would be designed and constructed in accordance with Caltrans standards.

Each Build Alternative would require acquisition of approximately 2.8 to 3.2 hectares (seven to eight acres) of ROW for the new interchange ramps and the realignment of Jefferson Street. These parcels are located north of the existing interchange, on the west and east side of Jefferson Street. There would be no ROW acquisition of private property west of Jefferson Street.

The Build Alternatives are not anticipated to result in population growth or result in the construction of additional housing, and are designed to accommodate present and projected traffic growth in the area. These alternatives are consistent with current land use plans and SCAG's 2008 RTP.

Unique Features of Build Alternatives

Build Alternative 1: New Partial Cloverleaf Interchange

Build Alternative 1 consists of the construction of a new partial cloverleaf type interchange with loop and diamond on-ramps as well as signalization of all study intersections. The proposed typical section of Jefferson Street across I-10 would have six standard traffic lanes and a 4.8-meter (16-foot) median. Dedicated right-turn lanes for the loop on-ramps would be provided. The new overcrossing would accommodate the ultimate eight-lane facility for I-10, as referenced in the PSR prepared for this project which was approved by Caltrans in March 2002. This alternative would provide a continuous travel path for westbound traffic on Indio Boulevard transitioning through the interchange to northbound Jefferson Street. Construction of the new overcrossing and interchange ramps would require removal of the existing Jefferson Street overcrossing and the northbound Indio Boulevard overcrossing. This alternative would require acquisition of approximately 2.8 hectares (seven acres) of ROW for the new interchange ramps and reconstruction of Jefferson Street south of its intersection with Varner Road, and is anticipated to involve both partial and full acquisitions of affected parcels. These parcels are located north of the existing interchange, on the west and east sides of Jefferson Street. The total cost of ROW acquisition is estimated to be $3,100,000. In conjunction with the estimated roadway costs of $44,725,000 and structure costs of $24,032,000, the total estimated cost of this alternative is approximately $72,000,000.

This alternative would improve the operational efficiency of Jefferson Street by providing a continuous alignment across I-10. The widened facility would also be able to handle larger volumes of traffic forecasted by the traffic report for the design year 2036. Also, westbound and eastbound movements entering I-10 would be accessed through dedicated right turns onto loop on-ramps, reducing delay at signalized ramp intersections. The proposed eastbound exit ramp would require construction of a mechanically stabilized earth (MSE) retaining wall at the boundary of the UPRR ROW. The type of MSE retaining wall would be determined during the final design phase of the project.

Build Alternative 2: New Modified Diamond Interchange

Build Alternative 2 consists of the construction of a new modified diamond type interchange with standard diamond ramps and a direct connector for westbound Indio Boulevard traffic to access westbound I-10. Signals are proposed at all intersections. The proposed typical section of Jefferson Street across I-10 would utilize six standard traffic lanes and a 4.8-meter (16-foot) median. A dedicated lane to accommodate a free right turn onto the eastbound on-ramp would be provided. The new overcrossing would accommodate the ultimate eight-lane facility as referenced in the PSR. This alternative would provide a continuous travel path for westbound traffic onto I-10 from Indio Boulevard via the existing North Indio Boulevard overcrossing.

Construction of the new overcrossing and interchange ramps would require removal of the existing Jefferson Street overcrossing. This alternative would require acquisition of approximately 3.2 hectares (eight acres) of ROW for the new interchange ramps and reconstruction of Jefferson Street south of its intersection with Varner Road, and is anticipated to involve both partial and full acquisitions of affected parcels. These parcels are located north of the existing interchange, on the west and east side of Jefferson Street. The total cost of ROW acquisition is estimated to be $3,100,000. In conjunction with the estimated roadway costs of $43,526,000 and structure costs of $23,117,000, the total estimated cost of this alternative is approximately $70,000,000.

This alternative would improve the operational efficiency of Jefferson Street by providing a continuous alignment across I-10. The widened facility would also be able to handle larger volumes of traffic forecasted by the traffic report for the design year 2036. Also, westbound movements entering I-10 would be accessed through the existing northbound Indio Boulevard overcrossing, reducing delay at signalized ramp intersections. Eastbound movements entering I-10 would be accessed through a dedicated right turn lane to the eastbound loop on-ramp. The proposed eastbound exit ramp would require construction of an MSE retaining wall at the boundary of the UPRR ROW. The type of MSE retaining wall would be determined during the final design phase of the project.

No-Build Alternative

The No Build Alternative would maintain the existing interchange facility in its current condition. There are no capital costs associated with

this alternative. The No Build Alternative is provided in the analysis as a basis for comparison to the Build Alternatives. The No Build Alternative would produce no immediate environmental impacts; consequently, no mitigation would be required. However, this alternative would not address the projected operational deficiencies at the interchange as development takes place and traffic demand increases. By the year 2036, the intersections associated with the interchange are projected to deteriorate from LOS C to LOS F. The inadequate capacity and geometric deficiencies of the existing interchange and local street system, when subjected to increased traffic, would contribute to the operational breakdown of the facility and to a higher incidence of congestion and the potential for related accidents. This alternative is not consistent with the current and future mobility goals for the region. The No Build Alternative would not reduce traffic congestion and improve the overall traffic movement and safety based on projected traffic for year 2036 and would not meet the purpose and need of the proposed project.

Type of Project *(use Table 1 on instruction sheet)*
Reconfigure existing interchange.

County	**Narrative Location/Route & Postmiles:** The proposed project is located in the Riverside County on Interstate 10 at Jefferson Street from PM 51.7 to 53.1 (KP 83.3 to 85.4).
Riverside	**Caltrans Projects – EA#** 47520

Lead Agency: County of Riverside

Contact Person	**Phone#**	**Fax#**	**Email**
Cindi Wachi	951.955.1863		cwachi@rctlma.org

Hot Spot Pollutant of Concern *(check one or both)* **PM2.5** **PM10 X**

Federal Action for which Project-Level PM Conformity is Needed *(check appropriate box)*

Categorical Exclusion (NEPA)	**X**	**EA or Draft EIS**	**FONSI or Final EIS**	**PS&E or Construction**	**Other**

Scheduled Date of Federal Action: 2012

NEPA Delegation – Project Type *(check appropriate box)*

Exempt	**Section 6004 – Categorical Exemption**	**X**	**Section 6005 – Non-Categorical Exemption**

Current Programming Dates *(as appropriate)*

	PE/Environmental	**ENG**	**ROW**	**CON**
Start	1/15/2002	6/15/2012	6/15/2012	12/31/2013
End	6/15/2012	12/31/2013	12/31/2013	12/31/2014

Note: The project has a scheduling change since its inclusion in the current 2008 RTP. Due to project delays, the completion date is required to be extended. However, no additional amendments are being incorporated into the 2008 RTP at this time, as the 2012 RTP is forthcoming. Therefore, the project schedule will be updated in the 2012 RTP. There will be no changes to the project concept, scope, or design between the 2008 and the 2012 RTPs.

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*

The purpose of the project is:

- To correct existing geometric deficiencies;
- To reduce projected operational deficiencies from the anticipated increased traffic demand and congestion from the forecasted growth and development in the area; and
- To improve interchange traffic operation and improve access along Jefferson Street and its intersection width.

The proposed project addresses the following needs, or transportation deficiencies and problems:

- The existing interchange does not provide a continuous alignment for Jefferson Street crossing I-10 and requires excessive turning movements;
- Non-standard lane configurations and turning movement may not meet drivers' expectations;
- The increased traffic volumes in conjunction with the limited capacity of the existing interchange are expected to result in the deterioration of traffic operations at the interchange ramps and intersections from LOS C to LOS F by the year 2036;
- By study year 2036, overflow conditions will exist at the intersection of Jefferson Street and westbound I-10 ramps;
- The close proximity of the UPR track and the Bermuda Dunes Airport to the south of I-10 and Varner Road to the north of I-10 constrain and restrict improvements to the interchange in its existing configuration; and

- The existing Jefferson Street overcrossing is not long enough to allow for the future widening of I-10 to accommodate the route concept facility.

The proposed interchange improvements are consistent with design work identified in the PSR prepared by Caltrans, dated December 2000.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

The adjoining commercial uses to the north are designated as residential and recreational uses; uses located to the south are also designated residential. Future approved commercial uses are also located to the south.

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Forecast Year 2016 (opening year) volumes, percent of heavy trucks, and volume of heavy trucks are presented in Table 1 (Opening Year Traffic Volumes).

Table 1
Opening Year Traffic Volumes

Roadway Segment	No Build			Alternative 1 and 2		
	ADT	% Heavy Trucks	# Heavy Trucks	ADT	% Heavy Trucks	# Heavy Trucks
I-10 Mainline						
West of Jefferson Street	112,110	13.0	14,574	112,110	13.0	14,574
East of Jefferson Street	97,070	13.0	12,619	97,070	13.0	12,619
I-10/Jefferson Ramps						
EB Exit	13,200	5.0	660	13,200	5.0	660
EB Entrance	3,600	5.0	180	3,600	5.0	180
WB Exit	2,200	5.0	110	2,200	5.0	110
WB Entrance	9,500	5.0	475	9,500	5.0	475

ADT = Average Daily Traffic; EB = eastbound; WB = westbound
Source: RBF Consulting, *I-10/Jefferson Interchange Configuration Traffic Analysis*, June 16, 2011.

Table 2 (Opening Year LOS) summarizes forecast year 2016 Build for each alternative and No Build AM peak hour and PM peak hour average stopped delay per vehicle, and corresponding LOS of the study intersections.

Table 2
Opening Year Intersection LOS Summary

Location	Forecast Year 2016					
	No Build		Build Alternative 1		Build Alternative 2	
	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
Jefferson Street/Varner Rd (East)	15.4 – B	17.5 – B	- -	- -	- -	- -
Jefferson Street/Varner Rd (West)	178.5 – F	260.2 – F	- -	- -	- -	- -
Jefferson Street/Varner Rd	- -	- -	27.9 – C	30.4 – C	31.0 – C	31.3 – C
Jefferson Street/I-10 WB Ramps	768.7 – F	>999.9 – F	7.5 – A	8.0 – A	5.7 – A	4.6 – A
Jefferson Street/I-10 EB On-Ramp	116.5 – F	241.7 – F	- -	- -	- -	- -
Jefferson Street/I-10 EB Off-Ramp	84.7 – F	185.8 – F	- -	- -	- -	- -
Jefferson Street/I-10 EB Ramps	- -	- -	18.0 – B	13.8 – B	14.4 – B	16.4 – B
Jefferson Street/Indio Boulevard	18.0 – B	18.8 – B	15.3 – B	22.5 – C	16.8 – B	23.8 – C

Bold = exceeds performance standard of level of service (LOS) "D"; EB = eastbound; WB = westbound; LOS = level of service
Source: RBF Consulting, *I-10/Jefferson Interchange Configuration Traffic Analysis*, June 16, 2011.

RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Forecast Year 2036 (horizon year) volumes, percent of heavy trucks, and volume of heavy trucks are presented in Table 3 (Horizon Year Traffic Volumes).

Table 3
Horizon Year Traffic Volumes

Roadway Segment	No Build			Alternative 1 and 2		
	ADT	% Heavy Trucks	# Heavy Trucks	ADT	% Heavy Trucks	# Heavy Trucks
I-10 Mainline						
West of Jefferson Street	173,550	13	22,562	173,550	13	22,562
East of Jefferson Street	158,450	13	20,599	158,450	13	20,599
I-10/Jefferson Ramps						
EB Exit	24,100	5	1,205	24,100	5	1,205
EB Entrance	11,400	5	570	11,400	5	570
WB Exit	7,600	5	380	7,600	5	380
WB Entrance	24,300	5	1,215	24,300	5	1,215

ADT = Average Daily Traffic; EB = eastbound; WB = westbound
Source: RBF Consulting, *I-10/Jefferson Interchange Configuration Traffic Analysis*, June 16, 2011.

Table 4 (Horizon Year Intersection LOS Summary) summarizes forecast year 2036 Build for each alternative and No Build AM peak hour and PM peak hour average stopped delay per vehicle, and corresponding LOS of the study intersections.

Table 4
Horizon Year Intersection LOS Summary

Location	Forecast Year 2036					
	No Build		Build Alternative 1		Build Alternative 2	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	LOS	LOS	LOS	LOS	LOS	LOS
Jefferson Street/Varner Rd (East)	172.6 – F	302.3 – F	- -	- -	- -	- -
Jefferson Street/Varner Rd (West)	>999.9 – F	>999.9 – F	- -	- -	- -	- -
Jefferson Street/Varner Rd	- -	- -	59.3 – E	74.7 – E	51.8 – D	79.5 – E
Jefferson Street/I-10 WB Ramps	>999.9 – F	>999.9 – F	18.0 – B	20.4 – C	18.3 – B	20.5 – C
Jefferson Street/I-10 EB On-Ramp	>999.9 – F	>999.9 – F	- -	- -	- -	- -
Jefferson Street/I-10 EB Off-Ramp	588.4 – F	660.4 – F	- -	- -	- -	- -
Jefferson Street/I-10 EB Ramps	- -	- -	36.0 – D	54.9 – D	38.0 – D	60.4 – E
Jefferson Street/Indio Boulevard	25.3 – C	60.7 – E	28.4 – C	56.1 – E	26.0 – C	56.4 – E

Bold = exceeds performance standard of level of service (LOS) "D"; EB = eastbound; WB = westbound; LOS = level of service
Source: RBF Consulting, *I-10/Jefferson Interchange Configuration Traffic Analysis*, June 16, 2011.

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

See Above.

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT

See Above.

Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)*

Some traffic delays can be expected during construction of the project. However, the traffic impacts during construction are only temporary in nature and will cease upon completion of construction activities.

During the operational phase, the proposed project would result in the modification of the existing entrance and exit ramps at the I-10/Jefferson Street interchange. No modifications to the existing I-10 mainline are planned as part of the project. Thus, local traffic would not be significantly redistributed.

Comments/Explanation/Details *(attach additional sheets as necessary)*

Within the project limits, the City of Indio 2020 General Plan Circulation Element states the ultimate facility configuration for Jefferson Street is an Augmented Major (A) with a design speed of 90 km/h (55 mph). These improvements have not been programmed by the City, but are likely to be implemented as conditions of future development.

Although the I-10 mainline experiences heavy truck traffic of approximately 13 percent, the proposed project does not involve any modifications to the mainline. Rather, the exit and entrance ramps that will be modified experience approximately 5 percent heavy truck traffic. Note that this interchange does not directly serve any ports, rail yards, or other significant sources of particulate matter.

The project is included in the 2008 RTP (RTP ID 47520). The project is also programmed within the SCAG adopted 20011 Federal Transportation Improvement Program (FTIP). The FTIP is a capital listing of all transportation projects proposed over a six-year period for SCAG. The projects include highway improvements, transit, rail and bus facilities, high occupancy vehicle lanes, signal synchronization, intersection improvements, freeway ramps, etc. These projects constitute a large investment of public funds. The project is included in the FTIP for fiscal year FY 2010/11-2013/14 as a State Highway Project:

> #47520: IN INDIO AT I-10/JEFFERSON ST IC- RECON/WIDEN IC 2 TO 6 LNS (Sun City Blvd to UPRR bridge), WIDEN RAMPS 1 TO 2 & 3 LNS, ADD NEW WB & EB ENTRY RAMPS & WIDEN VARNER RD 2 TO 4 LNS (EA: 47520, PPNO: 0053A). Model No. R290.

It should be noted that the project has a scheduling change since its inclusion in the current 2008 RTP. Due to project delays, the completion date is required to be extended. However, no additional amendments are being incorporated into the 2008 RTP at this time, as the 2012 RTP is forthcoming. Therefore, the project schedule will be updated in the 2012 RTP. There will be no changes to the project concept, scope, or design between the 2008 and the 2012 RTPs. Additionally, the project was originally submitted to the TCWG in June 2007 and was determined to be not a Project of Air Quality Concern (POAQC) by the TCWG. Since the 2007 submittal, the realingment of Varner road has been removed and processed as a separate local project, but is included as a cumulative project. As a result, the project is being resubmitted to the TCWG to confirm that the project is not a POAQC.

Based upon the information provided above, the project is not expected to introduce significant amounts of diesel truck traffic and is not considered a project of significant concern per the definition contained within 40 CFR 93.123(b)(1). Thus, a less than significant impact with respect to $PM_{2.5}$ and PM_{10} would occur.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	RIV	I-10	R83.2-85.5		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY HAILE
No. C72109
Exp. 06/30/12
CIVIL
STATE OF CALIFORNIA

COUNTY OF RIVERSIDE
3525 14th STREET
RIVERSIDE, CA 92501

RBF CONSULTING
3300 EAST GUASTI ROAD, SUITE 100
ONTARIO, CA 91761

JEFFERSON ST
VARNER ROAD
EXIST CALTRANS R/W
INTERSTATE 10
UNION PACIFIC RAILROAD
679-710-035
679-710-034
607-260-015
607-260-014
(607-260-030)
607-260-005
679-190-012
(679-180-040)
679-190-001
(679-180-057)
679-190-058
607-260-030
607-260-042
607-260-022
607-260-041
607-260-043
607-260-019
607-260-039
(607-260-047)
607-260-009
0.79 AC
0.95 AC
3.68 AC
1.73 AC
1.64 AC
3.03 AC

0 600'
APPROXIMATE

8/3/11 JN 65-100771-13477

I-10/JEFFERSON STREET INTERCHANGE PROJECT • AIR QUALITY ASSESSMENT

Subject Site - Alternative 2

Exhibit 1b

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	RIV	I-10	R83.2-85.5		

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY HAILE
No. C72109
Exp. 06/30/12
CIVIL
STATE OF CALIFORNIA

COUNTY OF RIVERSIDE
3525 14th STREET
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RBF CONSULTING
3300 EAST GUASTI ROAD, SUITE 100
ONTARIO, CA 91761

JEFFERSON ST
VARNER ROAD
EXIST CALTRANS R/W
INTERSTATE 10
UNION PACIFIC RAILROAD
0.79 AC
4.70 AC
0.95 AC
1.66 AC
1.64 AC
3.03 AC

0 600'
APPROXIMATE

8/3/11 JN 65-100771-13477

I-10/JEFFERSON STREET INTERCHANGE PROJECT • AIR QUALITY ASSESSMENT

Subject Site - Alternative 1

Exhibit 1a